



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/486,530

06/01/2000

PETER CHARLES FLORENCE

P/25-254

8653

20802 7590 07/09/2007  
SYNNESTVEDT LECHNER & WOODBRIDGE LLP  
P O BOX 592  
112 NASSAU STREET  
PRINCETON, NJ 08542-0592

EXAMINER

KIM, KEVIN

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

07/09/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

09/486,530

Applicant(s)

FLORENCE ET AL.

Examiner

Kevin Y. Kim

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 34-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 34-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sointula (US 6,091,780 previously cited) in view of Wright (US 5,809,083).

#### Claim 34.

Sointula discloses a communications device (see Fig.8), comprising:

means (506 shown in Fig.5) for receiving a modulated radio-frequency signal;

means (803) for down-converting said received modulated radio-frequency signal to a modulated intermediate-frequency signal;

means (806) for digitizing said modulated intermediate-frequency signal;

means (807) for exporting said digitized, modulated intermediate-frequency signal to a main processor (DSP) in a personal computing device; and

software means, operating on said main processor of said personal computing device, comprising instructions for performing all aspects of handling said digitized, modulated intermediate-frequency signal in order to demodulate said digitized, modulated intermediate-frequency signal. See col. 11, line 65 ~ col.12, line 17 and Fig.12B. It should be noted that the hardware elements inside the DSP for the purpose of demodulation are provided to illustrate the functions performed by the instructions stored in the DSP as such is well known in the art.

The claimed invention requires “a general purpose” main processor in order to demodulate the digitized and modulated IF signal. Wright teaches a general purpose DSP maybe used for demodulation. See Fig.5 and col. 12-18. Thus, it would have been obvious to one skilled in the art at the time the invention was made to use a general purpose main processor in the communication device of Sointula, as taught by Wright.

Claim 35.

The software means operating on said main processor, comprises instructions for transcoding said digitized, modulated intermediate-frequency signal to produce an audio frequency signal. See Data Reconstruction Circuit (811).

Claim 36.

The software means operating on said main processor, further comprises instructions for decoding said audio frequency signal to produce a binary digital signal.

See the computing device comprises a phones such decoding said audio frequency signal to produce a binary digital signal is required. See Fig.3.

Claim 37.

Sointula in combination with Wright discloses all the subject matter claimed except that the signal comprises a COFDM signal and a QAM signal. However, COFDM and QAM are well known modulation schemes in the art and thus would have been

Art Unit: 2611

obvious alternative schemes to frequency hopping employed in the terrestrial GSM cellular network, an embodiment of Sointula.

3. Claims 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al (US 5,444,697 previously cited) in view of Leung (US 6,064,871 previously cited).

Leung et al discloses a communication apparatus comprising;

means (an antenna coupled to or part of FM Receiver) for receiving a modulated radio-frequency signal;

means (43) for down-converting said received modulated radio-frequency signal to a baseband signal;

means (61) for digitizing said signal;

means (60 to 70) for exporting said digitized signal to a main processor (72) in a personal computing device (70); and

software means, operating on said main processor of said personal computing device, comprising instructions for performing all aspects of handling said digitized, signal in order to demodulate said signal. See col. 11, line 65 ~ col.12, line 17 and Fig.12B.

The claimed invention is different in that the intermediate frequency signal is digitized and thus digitized IF signal is provided to the computer for demodulation. However, it is well known in the art to digitize IF signal and to perform subsequent digital demodulation in order to overcome requirement of complex analog signal processing circuitry, as described in the patent to Leung. See col.1, lines 16-23. Thus, it

Art Unit: 2611

would have been obvious to one skilled in the art at the time the invention was made to provide a digitized IF signal to the computer for digital demodulation for the purpose of simplifying the analog receiver (43) as taught by Leung.

Claim 35 and 36.

The software means operating on said main processor, comprises instructions (70) for transcoding said digitized, modulated intermediate-frequency signal to produce an audio frequency signal.

Claim 37.

Leung et al teaches the reception of OFDM and the claimed COFDM is a variation of OFDM. Leung et al also describes QAM demodulation (72).

### *Conclusion*

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2611

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

July 5, 2007

AU 2611

KEVIN KIM  
PRIMARY PATENT EXAMINER

